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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,986	03/12/2001	Yukio Michishita	00USFP606	6963
21254	7590	04/05/2005	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			TRAN, DZUNG D	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/802,986

Applicant(s)

MICHISHITA, YUKIO

Examiner

Dzung D Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 2, 6-10, 14-19 & 21 is/are rejected.
- 7) ☐ Claim(s) 3-5, 11-13 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. US patent no. 6,115,156 in view of Bergano US patent no. 6,137,604.

Regarding claim 1, Otani discloses in figure 3, a demultiplexer device 4 (equivalent to light branching apparatus), see col. 1, line 28, comprising:

an optical coupler (5, col. 1, line 29) (same as splitter) which splits an optical signal for a plurality of channels ( $\lambda_1 \dots \lambda_4$ ) on a first optical fiber (1) into at least a first optical channel signal on a first channel (channel  $\lambda_1$ ) of a second optical fiber (fiber that connected to outputs S3, S4, not shown) and a plurality of second optical channel signals on a plurality of second channels (channel  $\lambda_3, \lambda_4$ ) of the third optical fiber (fiber that connected to outputs S3, S4, not shown); and

a first equalizing fiber 7, 8, 9, 10, 11 (same as first wavelength dispersion compensator) on the second optical fiber (fiber that connected to outputs S3, S4) which is provided for said first channel (channels  $\lambda_1, \lambda_2$ ) and compensates wavelength dispersion of said first optical channel signal (channel  $\lambda_1$ ) due to the optical coupler (5, col. 1, line 29) (same as optical splitter). Otani does not specific disclose a second

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optical fiber that connected to output S3, S4 and third optical fiber that connected to outputs S1, S2. Bergano discloses an optical combiner 206 that combine the wavelength compensated dispersion channels then transmits them over an optical fiber 207. At the time of the invention was made, it would have been obvious to one skill in the art to include the optical combiner taught by Bergano in the system taught by Otani. Since optical multiplexer is well-known in the art for combines multiple optical inputs into an optical output. One of ordinary skill in the art would have been motivated to do this in order to transmit a plurality of wavelength bands over a single optical fiber.

Regarding claim 2, Otani discloses a second equalizing fiber 6 (same as second wavelength dispersion compensator) which is provided for said plurality of second channels (channels  $\lambda_3$ ,  $\lambda_4$ ) and compensates wavelength dispersion of said plurality of second optical channel signals (channels  $\lambda_3$ ,  $\lambda_4$ ) due to the optical coupler (5, col. 1, line 29) (same as optical splitter).

Regarding claim 8, Otani discloses a plurality of optical channel signals  $\lambda_1$ ,  $\lambda_2$  are compensated in units of channels and first wavelength dispersion compensator includes at least a first wavelength dispersion compensating element 9, 10, 11 for the channel of the first optical channel signal (channel  $\lambda_1$ ).

3. Claims 6, 7, 9, 10, 14-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. US patent no. 6,115,156 in view of Bergano US patent no. 6,137,604 and further in view of Prior Art figure 1.

Regarding claim 9, as per claim 1 above, Otani and Bergano disclose all the limitations, except for a first optical fiber connected to a first station; a second optical

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fiber connected to a second Station; a third optical fiber connected to a third station.

Prior art, in figure 1 discloses a WDM system that include optical brancher 13, having a first optical fiber connected to a first station 11; a second optical fiber connected to a second Station 12; a third optical fiber connected to a third station 14. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the terminal stations taught by prior art in the system of Otani and Bergano. One of ordinary skill in the art would have been motivated to do this in order for properly distribute the optical signals to end users.

Regarding claim 10, Otani discloses a second equalizing fiber 6 (same as second wavelength dispersion compensator) which is provided for said plurality of second channels (channels  $\lambda_3$ ,  $\lambda_4$ ) and compensates wavelength dispersion of said plurality of second optical channel signals (channels  $\lambda_3$ ,  $\lambda_4$ ) due to the optical coupler (5, col. 1, line 29) (same as optical splitter).

Regarding claims 6 and 14, as per claim 1 above, Otani and Bergano disclose all the limitations, except for third wavelength dispersion compensator) for compensating wavelength dispersion of first optical channel signal due to second fiber. Prior art discloses equalizing fiber 21 (equivalent to third wavelength dispersion compensator) for compensating wavelength dispersion of first optical channel signal (channel  $\lambda_1$ ) due to second fiber (page 1, para. 0010). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the equalizing fiber taught by prior art in the system of Otani and Bergano. One of ordinary skill in the art

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would have been motivated to do this in order to compensate wavelength dispersion of optical signal, thus it reduces signal interference and improve the signal bit error rate.

Regarding claims 7 and 15, as per claim 1 above, Otani and Bergano disclose all the limitations, except for third wavelength dispersion compensator) for compensating wavelength dispersion of first optical channel signal due to second fiber. Prior art discloses equalizing fiber 21 (equivalent to fourth wavelength dispersion compensator) for compensating wavelength dispersion of first optical channel signal (channel  $\lambda_2$ ) due to second fiber (page 1, para. 0010 of specification). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the equalizing fiber taught by prior art in the system of Otani and Bergano. One of ordinary skill in the art would have been motivated to do this in order to compensate wavelength dispersion of optical signal, thus it reduces signal interference and improve the signal bit error rate.

Regarding claim 16, Otani discloses a plurality of optical channel signals  $\lambda_1$ ,  $\lambda_2$  are compensated in units of channels and first wavelength dispersion compensator includes at least a first wavelength dispersion compensating element 9, 10, 11 for the channel of the first optical channel signal (channel  $\lambda_1$ ).

Regarding claims 17, 18 and 21, as per claim 1 above, Otani and Bergano disclose all the limitations, except for an optical switch which switches a transmission channel of a first optical channel signal on a first optical fiber from a first channel on a second optical fiber to a second channel on a third optical fiber. Prior art figure 2 discloses a light branching apparatus 13 comprising: an optical switch 13A which

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switches a transmission channel of a first optical channel signal on a first optical fiber from a first channel on a second optical fiber to a second channel on a third optical fiber. Since the switch is well known in the art for redirect the optical signal in the system, therefore it would have been obvious to an artisan at the time of the invention was made to include the optical switch taught by the prior art in the system of Otani and Bergano. One of ordinary skill in the art would have been motivated to do this in order to recovery operation performed of the optical system in case of fault occurs on the transmission path or a failure of break of the transmission path and improve the reliable of the optical system (page 1, para. 0008 of specification).

Regarding claim 19, Prior art discloses equalizing fiber 21 (equivalent to second wavelength dispersion compensator) for compensating wavelength dispersion of second optical channel signal (channel  $\lambda_2$ ) due to second fiber (page 1, para. 0010 of specification). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the equalizing fiber taught by prior art in the system of Otani and Bergano. One of ordinary skill in the art would have been motivated to do this in order to compensate wavelength dispersion of optical signal, thus it reduces signal interference and improve the signal bit error rate.

4. Claims 3-5, 11-13 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran  
03/28/2005

*Dzung tran*